Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) An ultrasonic transducer, comprising:

a plurality of micro-machined ultrasonic transducer (MUT) elements formed on a ~~first~~ substrate, the ~~first~~ substrate including a first surface and a second surface; and

a plurality of vias associated with each MUT element and extending entirely through the ~~first~~ substrate between the first surface and the second surface, wherein each MUT element comprises a plurality of MUT cells and wherein the plurality of vias include vias proximate to and surrounding each MUT cell, the plurality of vias further having a diameter towards the first surface that is different than a diameter of the respective vias towards the second surface, where the vias reduce the propagation of acoustic energy traveling laterally in the ~~first~~ substrate.

2. (currently amended) The transducer of claim 1, wherein the vias are etched into the ~~first~~ substrate.

3. (currently amended) The transducer of claim 2, wherein first and second portions of the vias are etched into the first ~~surface of the first substrate~~ and ~~the~~ second ~~surface~~ surfaces of the ~~first~~ substrate, respectively, and wherein the first portion includes a first diameter and the second portion includes a second diameter different from the first diameter.

4-9. (cancelled)

10. (currently amended) A method of reducing the lateral propagation of acoustic

energy in an ultrasonic transducer, the method comprising the steps of:

forming a plurality of micro-machined ultrasonic transducer (MUT) elements on a ~~first~~ substrate, the ~~first~~ substrate including a first surface and a second surface; and

forming a plurality of vias proximate to each MUT element such that the vias extend entirely through the ~~first~~ substrate between the first surface and the second surface, wherein each MUT element comprises a plurality of MUT cells and wherein the plurality of vias include vias proximate to and surrounding each MUT cell, the plurality of vias further having a diameter towards the first surface that is different than a diameter of the respective vias towards the second surface in order to reduce the propagation of acoustic energy traveling laterally in the ~~first~~ substrate.

11. (currently amended) The method of claim 10, wherein the step of forming a plurality of vias includes etching the vias into the ~~first~~ substrate.

12. (currently amended) The method of claim 10, wherein the step of forming a plurality of vias includes etching first and second portions of the vias into the first ~~surface of the first substrate~~ and ~~the~~ second ~~surface~~ surfaces of the ~~first~~ substrate, respectively, and wherein the first portion includes a first diameter and the second portion includes a second diameter different from the first diameter.

13-17. (cancelled)

18. (new) The transducer of claim 1, wherein the vias are located at respective corners of each MUT cell.

19. (new) The transducer of claim 1, wherein each MUT cell includes a first conductive layer formed on the first surface of the substrate, a flexible membrane formed over the substrate and the first conductive layer, the flexible membrane

including a gap within the flexible membrane, and a second conductive layer formed over the flexible membrane over the gap.

20. (new) The transducer of claim 1, wherein the diameter towards the first surface is smaller than the diameter towards the second surface.

21. (new) The transducer of claim 1, wherein each MUT element comprises four MUT cells, further wherein the four MUT cells are each surrounded by four vias.

22. (new) An ultrasonic transducer, comprising:

a plurality of micro-machined ultrasonic transducer (MUT) elements formed on a substrate, the substrate including a first surface and a second surface; and

a plurality of vias associated with each MUT element and extending entirely through the substrate between the first surface and the second surface, wherein each MUT element comprises a plurality of MUT cells and wherein the plurality of vias include vias proximate to and surrounding each MUT cell, the plurality of vias further having a diameter towards the first surface that is different than a diameter of the respective vias towards the second surface, where the vias reduce the propagation of acoustic energy traveling laterally in the substrate, wherein the vias are located at respective corners of each MUT cell, wherein each MUT cell includes a first conductive layer formed on the first surface of the substrate, a flexible membrane formed over the substrate and the first conductive layer, the flexible membrane including a gap within the flexible membrane, and a second conductive layer formed over the flexible membrane over the gap, and wherein the diameter towards the first surface is smaller than the diameter towards the second surface.

23. (new) The method of claim 10, wherein forming of the plurality of vias further

includes forming vias located at respective corners of each MUT cell.

24. (new) The method of claim 10, wherein each MUT cell includes a first conductive layer formed on the first surface of the substrate, a flexible membrane formed over the substrate and the first conductive layer, the flexible membrane including a gap within the flexible membrane, and a second conductive layer formed over the flexible membrane over the gap.

25. (new) The method of claim 10, wherein the diameter towards the first surface is smaller than the diameter towards the second surface.

26. (new) The method of claim 10, wherein each MUT element comprises four MUT cells, further wherein the four MUT cells are each surrounded by four vias.